

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P561647

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-93-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561647  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-2LO-40-UNV-93-97-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

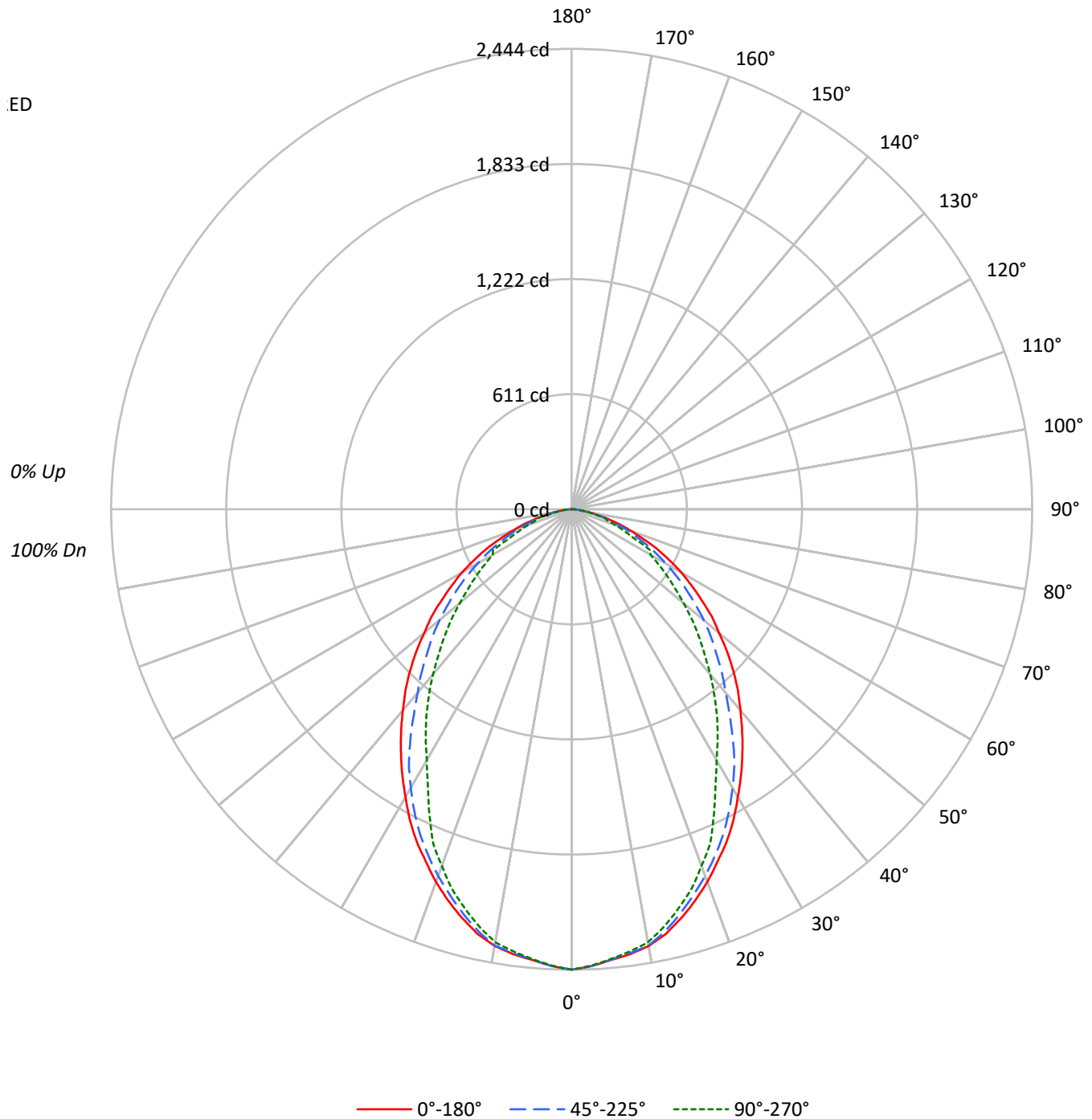
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4798.0 lumens  
Efficiency: N/A  
Efficacy: 102.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	6577	6577	6577
5°	6488	6480	6472
10°	6431	6424	6377
15°	6258	6195	6108
20°	6028	5931	5769
25°	5780	5654	5302
30°	5478	5303	4776
35°	5188	4901	4418
40°	4893	4467	4020
45°	4613	4129	3634
50°	4270	3833	3241
55°	3950	3473	2903
60°	3619	3102	2601
65°	3184	2716	2303
70°	2623	2378	1956
75°	2086	1822	1910
80°	1401	1314	1226
85°	874	1047	1223

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4613 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	227.5	4.7
10°-20°	624.4	13.0
20°-30°	864.4	18.0
30°-40°	921.7	19.2
40°-50°	840.9	17.5
50°-60°	658.8	13.7
60°-70°	429.3	8.9
70°-80°	190.2	4.0
80°-90°	40.9	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1716.3	35.8
0°-40°	2638.0	55.0
0°-60°	4137.6	86.2
0°-90°	4798.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4798.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2444	2444	2444	2444	2444	
5°	2402	2399	2399	2396	2396	228
15°	2246	2246	2224	2201	2193	631
25°	1947	1936	1904	1837	1786	894
35°	1579	1568	1492	1379	1345	987
45°	1212	1187	1085	995	955	934
55°	842	817	740	653	619	755
65°	500	472	427	435	362	493
75°	201	186	175	167	184	215
85°	28	31	34	37	40	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2444.0	2444.0	2444.0	2444.0	2444.0
2.5°	2427.1	2427.1	2427.1	2424.3	2424.3
5°	2401.7	2398.8	2398.8	2396.0	2396.0
7.5°	2381.9	2379.1	2376.2	2373.4	2367.7
10°	2353.6	2353.6	2350.8	2336.7	2333.8
12.5°	2308.4	2305.6	2294.3	2274.5	2268.9
15°	2246.3	2246.3	2223.6	2201.0	2192.6
17.5°	2178.4	2175.6	2147.4	2124.8	2113.5
20°	2105.0	2099.3	2071.1	2034.3	2014.6
22.5°	2023.0	2023.0	1989.1	1941.1	1921.3
25°	1946.8	1935.5	1904.4	1836.6	1785.7
27.5°	1859.2	1842.2	1808.3	1712.2	1652.9
30°	1763.1	1754.6	1706.6	1582.3	1537.1
32.5°	1672.7	1658.6	1607.7	1477.7	1441.0
35°	1579.4	1568.1	1491.9	1378.8	1344.9
37.5°	1486.2	1472.1	1376.0	1285.6	1243.2
40°	1393.0	1376.0	1271.5	1189.5	1144.3
42.5°	1305.4	1282.8	1181.0	1093.5	1042.6
45°	1212.1	1186.7	1085.0	994.6	955.0
47.5°	1118.9	1096.3	1003.0	909.8	864.6
50°	1020.0	1000.2	915.5	822.2	774.2
52.5°	938.1	907.0	825.0	731.8	692.2
55°	842.0	816.6	740.3	652.7	618.8
57.5°	754.4	729.0	658.3	576.4	548.1
60°	672.5	635.7	576.4	505.8	483.2
62.5°	582.0	553.8	502.9	443.6	471.9
65°	500.1	471.9	426.6	435.1	361.7
67.5°	409.7	395.6	356.0	316.5	305.2
70°	333.4	316.5	302.3	259.9	248.6
72.5°	265.6	248.6	228.9	206.3	197.8
75°	200.6	186.5	175.2	166.7	183.7
77.5°	138.4	132.8	124.3	115.8	113.0
80°	90.4	87.6	84.8	81.9	79.1
82.5°	53.7	53.7	53.7	53.7	53.7
85°	28.3	31.1	33.9	36.7	39.6
87.5°	17.0	17.0	19.8	22.6	25.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)